Chapter 14
IMPLEMENTATION

Implementation of a regulation is a critical step in the regulatory process. If a regulation is not effectively implemented, the removals and environmental benefits estimated for the regulation may not be achieved. Likewise, ineffective implementation could hinder the facility's operations without achieving the estimated environmental benefits. In discussions with permit writers and pretreatment authorities, many stated that close communication with CWT facilities is important for effective implementation of discharge permits. Control authorities need to have a thorough understanding of a CWT's operations to effectively implement this rule. Likewise, CWT facilities must maintain close communication with the waste generators in order to accurately characterize and treat the incoming waste streams.

APPLICABLE WASTE STREAMS 14.1

Chapter 5 describes the sources of wastewater for the CWT industry, which include the following:

Off-site-generated wastewater:
- Waste receipts via tanker truck, trailer/roll-off bins, and drums.

On-site-generated wastewater:
- Equipment/area washdown
- Water separated from recovered/recycled materials
- Contact/wash water from recovery and treatment operations
- Transport container washdown
- Solubilization water
- Laboratory-derived wastewater
- Air pollution control wastewater
- Incinerator wastewater from on-site incinerators
- Landfill wastewater from on-site landfills
- Contaminated stormwater.

All of these waste streams should be classified as process wastewater and are thus subject to the appropriate subcategory discharge standards. EPA believes that uncontaminated stormwater should not be mixed with waste receipts prior to complete treatment of the waste receipts since this arrangement may allow discharge standards to be met by dilution rather than proper treatment. However, EPA is concerned that only contaminated stormwater (i.e. stormwater which comes in contact with waste receipts and waste handling and treatment areas) be classified as a process wastewater. During site visits at CWT facilities, EPA observed many circumstances in which uncontaminated stormwater was commingled with the CWT wastewaters prior to treatment or was added after treatment prior to effluent discharge monitoring. EPA believes that permit writers and pretreatment authorities should be responsible for determining which stormwater sources warrant designation as process wastewater. Additionally, control authorities should require facilities to monitor and meet their CWT discharge requirements following wastewater treatment and prior to combining these treated CWT wastewaters with non-process wastewaters. If a control authority allows a facility to combine treated CWT wastewaters with non-process wastewaters prior to compliance monitoring, the control authority should ensure that the non-contaminated stormwater dilution flow is factored into the facility's permit limitations.

EPA has also observed situations where stormwater, contaminated and uncontaminated, was recycled as process water (e.g., as solubilization water for wastes in the solid phase to render the wastes treatable). In these instances, dilution is not the major source of pollutant reductions (treatment). Rather, this leads to reduced wastewater discharges. Permit writers and pretreatment authorities should investigate opportunities for use of such alternatives and encourage such practices wherever feasible.

DESCRIPTION OF SUBCATEGORY 14.2

One of the most important aspects of implementation is the determination of which subcategory's limitations are applicable to a facility's operation(s). As detailed in Chapter 5, EPA established a subcategorization scheme based on the character of the wastes being treated and the treatment technologies utilized. The subcategories are as follows:

Subcategory A: Metals Subcategory:
Facilities which treat, recover, or treat and recover metal, from metal-bearing waste, wastewater, or used material received from offsite;

Subcategory B: Oils Subcategory:
Facilities which treat, recover, or treat and recover oil, from oily waste, wastewater, or used material received from offsite; and

Subcategory C: Organics Subcategory:
Facilities which treat, recover, or treat and recover organics, from other organic waste, wastewater, or used material received from offsite;

The determination of a subcategory is primarily based on the type of process generating the waste, the characteristics of the waste, and the type of treatment technologies which would be effective in treating the wastes. It is important to note that various pollutants were detected in all three subcategories. That is, organic constituents were detected in metal subcategory wastewater and vice versa. The following sections provide a summary description of the wastes in each of the three subcategories; a more detailed presentation is in Chapter 5.

Metals Subcategory Description 14.2.1

Waste receipts classified in the metals subcategory include, but are not limited to: spent electroplating baths and sludges, spent anodizing solutions, air pollution control water and sludges, incineration wastewaters, waste liquid mercury, metal finishing rinse water and sludges, chromate wastes, cyanide-containing wastes, and waste acids and bases. The primary concern with metals subcategory waste streams is the concentration of metal constituents, and some form of chemical precipitation with solid-liquid separation is essential. These raw waste streams generally contain few organic consituents and have low oil and grease levels. The range of oil and grease levels in metal subcategory wastestreams sampled by EPA was 5 mg/L (the minimum analytical detection limit) to 143 mg/L. The average oil and grease level measured at metals facilities by EPA was 39 mg/L. As expected, metal concentrations in wastes from this subcategory were generally high in comparison to other subcategories. In general, wastes that contain significant quantities of inorganics and/or metals should be classified in the metals subcategory.

Oil Subcategory Description 14.2.2

Waste receipts classified in the oils subcategory include, but are not limited to:

lubricants, used petroleum products, used oils, oil spill clean-up, interceptor wastes, bilge water, tank cleanout, off-specification fuels, and underground storage tank remediation waste. Based on EPA's sampling data, oil and grease concentrations in these streams following emulsion breaking and/or gravity separation range from 23 mg/L to 180,000 mg/L. The facility average value is 5,976 mg/L. Based on information provided by industry, oil and grease content in these waste receipts prior to emulsion breaking and/or gravity separation varies between 0.1% and 99.6% (1,000 mg/L to 996,000 mg/L).

Additionally, as measured after emulsion breaking and/or gravity separation, these oily wastewaters generally contain a broad range of organic and metal constituents. Therefore, while the primary concern is often a reduction in oil and grease levels, oils subcategory wastewaters require treatment for metal constituents and organic constituents also. In general, wastes that do not contain a recoverable quantity of oil should not be classified as being in the oils subcategory. The only exception to that would be wastes contaminated with gasoline or other hydrocarbon fuels.

Organics Subcategory Description 14.2.3

Waste receipts classified in the organics subcategory include, but are not limited to: landfill leachate, contaminated groundwater clean-up, solvent-bearing waste, off-specification organic product, still bottoms, used glycols, wastewater from adhesives and epoxies, and wastewater from chemical product operations and paint washes. These wastes generally contain a wide variety and concentration of organic compounds, low concentrations of metal compounds (as compared to waste receipts in the metals subcategory), and low concentrations of oil and grease. The concentration of oil and grease in organic subcategory samples measured by EPA ranged from 2mg/L to 42 mg/L with an average value of 22 mg/L. The primary concern for organic wastestreams is the reduction in organic constituents which generally requires some form of biological treatment. In general, wastes that do not contain significant quantities of inorganics, metals, or recoverable quantities of oil or fuel should be classified as belonging to the organics subcategory.

FACILITY SUBCATEGORIZATION IDENTIFICATION 14.3

EPA believes that the paperwork and analyses currently performed at CWT facilities as part of their waste acceptance procedures (as outlined in Chapter 4) are generally sufficient for making a subcategory determination. EPA has strived to base its recommended subcategorization determination procedure on information generally obtained during these waste acceptance and confirmation procedures. EPA discourages permit writers and pretreatment authorities from requiring additional monitoring or paperwork solely for the purpose of subcategory determinations. In most cases, as detailed below, EPA believes the subcategory determination can be made on the type of waste receipt, e.g., metal-bearing sludge, waste oil, landfill leachate. EPA believes that all CWT facilities should, at a minimum, collect information from the generator on the type of waste receipt since this is the minimum information required by CWT facilities to effectively treat off-site wastes.

To determine an existing facility's subcategory classification(s), the facility should review its incoming waste receipt data for a period of one year. The facility should first use Table 14-1 below to classify each of its waste receipts for that one year period into a subcategory. Finally, the facility should determine the relative percent of off-site wastes accepted in each subcategory (by volume).

Table 14-1 Waste Receipt Classification

Metals Subcategory	spent electroplating baths and/or sludges; metal finishing rinse water and sludges; chromate wastes; air pollution control water and sludges; incineration wastewaters; spent anodizing solutions; waste liquid mercury; cyanide-containing wastes (>136 mg/L); and waste acids and bases with or without metals.
Oils Subcategory	used oils; oil-water emulsions or mixtures; lubricants; coolants; contaminated groundwater clean-up from petroleum sources; used petroleum products; oil spill clean-up; bilge water; rinse/wash wasters from petroleum or oily sources; interceptor wastes; off-specification fuels; underground storage remediation waste; and tank clean-out from petroleum or oily sources
Organics Subcategory	landfill leachate; contaminated groundwater clean-up from non-petroleum sources; solvent-bearing wastes; off-specification organic product; still bottoms; used glycols; wastewater from paint washes; wastewater from adhesives and/or epoxies; wastewater from chemical product operations; and tank clean-out from organic, non-petroleum sources

If the waste receipt is listed above, the subcategory determination is made solely from the information provided in Table 14-1. If, however, the waste receipt is unknown or not listed above, the facility should use the following hierarchy to determine the appropriate subcategory:

1). If the waste receipt contains oil and grease at or in excess of 100 mg/L, the waste receipt should be classified in the oils subcategory;

2). If the waste receipt contains oil and grease <100 mg/L, and has either cadmium, chromium, copper, or nickel concentrations in excess of the values listed below, the waste receipt should be classified in the metals subcategory.

cadmium	0.2 mg/L
chromium	8.9 mg/L
copper	4.9 mg/L
nickel	37.5 mg/L

3). If the waste receipt contains oil and grease < 100 mg/L, and does not have concentrations of cadmium, chromium, copper, or nickel above any of the values listed above, the waste receipt should be classified in the organics subcategory.

This process is also illustrated in Figure 14-1.

Members of the CWT industry have expressed concern that wastes may be received from the generator as a "mixed waste", i.e., the waste may be classified in more than one subcategory. Based on the information collected during the development of this rule, using the subcategorization procedure recommended in this section, EPA is able to classify each waste receipt identified by the industry into the appropriate subcategory. Therefore, EPA believes that these "mixed waste receipt" concerns have been addressed in the current subcategorization procedure.

Once the facility's subcategory determination has been made, the facility should not be required to make an annual determination. However, if a single subcategory facility alters their operation to accept wastes from another subcategory or if a mixed waste facility alters its annual operations to change the relative percentage of waste receipts in one subcategory by more than 20 percent, the facility should notify the appropriate permit writer or pretreatment authority and the subcategory determination should be re-visited. EPA also recommends that the subcategory determination be re-evaluated whenever the permit is re-issued.

For new CWT facilities, the facility should estimate the percentage of waste receipts expected in each subcategory. Alternatively, the facility could compare the treatment technologies being installed to the selected treatment technologies for each subcategory. After the initial year of operation, the permit writer or pretreatment authority should re-visit the CWT's subcategory determination and follow the procedure outlined for existing facilities.

Some facilities, such as those located near auto manufacturers, claim that their waste streams vary significantly for very limited time spans each year, and that they would be unable to meet limitations based on their annual waste receipts during these time periods. In these cases, one set of limits or standards may not be appropriate for the permit's entire period. EPA recommends that a tiering approach be used in such situations. In tiered permits, the control authority issues one permit for "standard" conditions and another set which take effect when there is a significant change in the waste receipts accepted. EPA's Industrial User Permitting Guidance Manual (September 1989) recommends that tiered permits should be considered when production rate varies by 20 percent or greater. Since this rule is not production based, EPA recommends that for the CWT industry, tiered permits should be considered when the subcategory determination varies for selected time periods by more than 20 percent. An example when a tiered approach may be appropriate in the CWT industry would be if a CWT facility's major customer (in terms of flow) does not operate for a two week period in December. The CWT facility would not be receiving waste receipts from the generating facility during their two week closure which could greatly alter the relative percent of waste accepted by the CWT facility for the two week period only.

As explained previously, many facilities have waste streams that vary on a daily basis. EPA cautions that the tiering approach should only be used for facilities which have limited, well-defined, "non-standard" time periods. A tiered permit should only be considered when the control authority thoroughly understands the CWT's operations and when a substantial change in the relative percentages of waste in each subcategory would effect permit conditions. Additionally, a tiered permit is never required if compliance is measured on a subcategory basis after each treatment system.

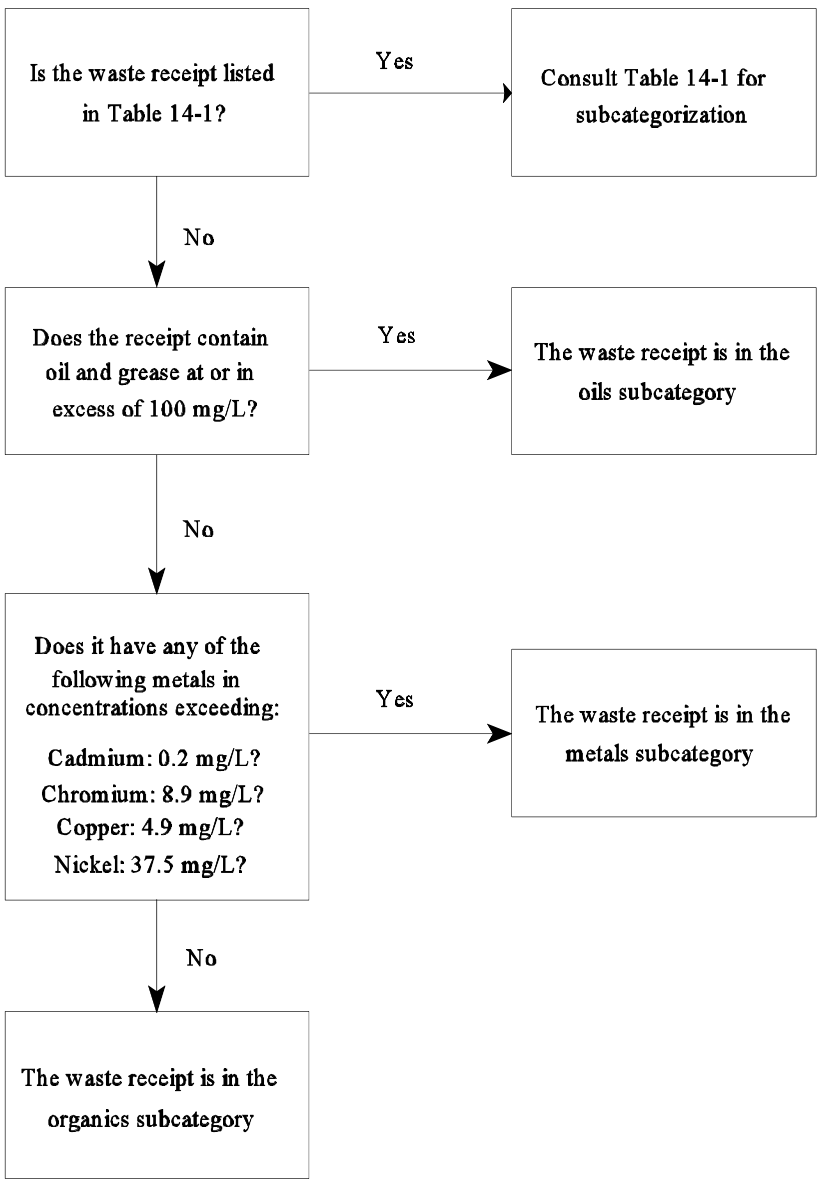

Figure 14-1. Waste Receipt Subcategory Classification Diagram

ON-SITE GENERATED WASTEWATER SUBCATEGORY DETERMINATION *14.4*

Section 14.3 details the subcategory determination for off-site waste receipts. For other on-site generated wastewater sources such as those described in Section 14.1, wastewater generated in support of, or as the result of, activities associated with each subcategory should be classified in that subcategory. For facilities that are classified in a single subcategory, the facility should generally classify on-site wastewater in that subcategory. For facilities that are classified in more than one subcategory, however, the facility should apportion the on-site generated wastewater to the appropriate subcategory. Certain waste streams may be associated with more than one subcategory such as stormwater, equipment/area washdown, air pollution control wastewater, etc. For these wastewater sources, the volume generated should be apportioned to each associated subcategory. For example, for contaminated stormwater, the volume can be apportioned based on the proportion of the surface area associated with operations in each subcategory. Equipment/area washdown may be assigned to a subcategory based on the volume of waste treated in each subcategory. Alternatively, control authorities may assign the on-site wastestreams to a subcategory based on the appropriateness of the selected subcategory treatment technologies.

On-site Industrial Waste Combustors, Landfills, and Transportation Equipment Cleaning Operations ***14.4.1***

As noted previously, wastewater from on-site industrial waste combustors, landfills, and transportation equipment and cleaning operations that is commingled with CWT wastewater for treatment shall be classified as CWT process wastewater. Like the off-site waste receipts, the subcategory determination of these wastewaters should be based on the characteristics of the wastewater and the appropriateness of the application of treatment technologies associated with each subcategory.

For wastewater associated with industrial waste combustors, the wastewater should be classified as a metals subcategory wastestream. This reflects the treatment technology selected in the recently proposed rule for Industrial Waste Combustors (63 FR 6392-6423). For landfill wastewater, the wastewater should be classified as an organics subcategory wastestream. This also reflects the treatment technology selected in the recently proposed rule for Landfills (63 FR 6426-6463)[1]. For wastewaters associated with transportation equipment cleaning, these wastestreams should be classified in a manner similar to that used for off-site waste receipts.

SUBCATEGORY DETERMINATION IN EPA QUESTIONNAIRE DATA BASE *14.5*

In order to estimate the quantities of wastewater being discharged, current pollutant loads, pollutant reductions, post compliance costs, and environmental benefits for each subcategory, EPA developed a methodology to classify waste streams for CWT facilities in the EPA Waste Treatment Industry Questionnaire database into each of the proposed subcategories. The following is a list of the rules used by EPA in the subcategory determination of the wastes reported in 308 Questionnaires. The rules rely primarily on Waste Form Codes (where available) plus RCRA wastes codes. Table 14-2 lists the waste form codes utilized in this classification.

[1] For leachate generated at Subtitle C landfills (hazardous), the selected technology basis is chemical precipitation and biological treatment.

Table 14-2. RCRA and Waste Form Codes Reported by Facilities in 1989

	RCRA CODES
D001	Ignitable Waste
D002	Corrosive Waste
D003	Reactive Waste
D004	Arsenic
D005	Barium
D006	Cadmium
D007	Chromium
D008	Lead
D009	Mercury
D010	Selenium
D011	Silver
D012	Endrin(1,2,3,4,10,10-hexachlorc-1,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-1,4-endo-5,8-dimeth-ano-napthalene)
D017	2,4,5-TP Silvex (2,4,5-trichlorophenixypropionic acid)
D035	Methyl ethyl ketone
F001	The following spent halogenated solvents used in degreasing: tetrachloroethylene; trichloroethane; carbon tetrachloride and chlorinated fluorocarbons and all spent solvent mixtures/blends used in degreasing containing, before use, a total of 10 percent or more (by volume) of one or more of the above halogenated solvents or those solvents listed in F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures
F002	The following spent halogenated solvents: tetrachloroethylene; 1,1,1-trichloroethane; chlorobenzene; 1,1,2-trichloro-1,2,2- trifluoroethane; ortho-dichlorobenzene; trichloroethane; all spent solvent mixtures/blends containing, before use, a total of 10 percent or more (by volume) of one or more of the above halogenated solvents or those solvents listed in F001, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures
F003	The following spent nonhalogenated solvents: xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol; all spent solvent mixtures/blends containing, before use, one or more of the above nonhalogenated solvents, and a total of 10 percent or more (by volume) of one or more of those solvents listed in F001, F002, F004, and F005-1 and still bottoms from the recovery of these spent solvents and spent solvent mixtures.
F004	The following spent nonhalogenated solvents: cresols, cresylic acid, and nitrobenzene; and the still bottoms from the recovery of these solvents; all spent solvent mixtures/blends containing before use a total of 10 percent or more (by volume) of one or more of the above nonhalogenated solvents or those solvents listed in F001, F002, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures
F005	The following spent nonhalogenated solvents: toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane; all spent solvent mixtures/blends containing, before use, a total of 10 percent or more (by volume) of one or more of the above nonhalogenated solvents or those solvents listed in F001, F002, or F004; and still bottoms from the recovery of these spent solvents and spent solvents mixtures
F006	Wastewater treatment sludges from electroplating operations except from the following processes: (1) sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel: (5) cleaning/stripping associated with tin, zinc, and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum
F007	Spent cyanide plating bath solutions from electroplating operations
F008	Plating bath residues from the bottom of plating baths from electroplating operations in which cyanides are used in the process

Table 14-2. RCRA and Waste Form Codes Reported by Facilities in 1989

F009	Spent stripping and cleaning bath solutions from electroplating operations in which cyanides are used in the process
F010	Quenching bath residues from oil baths from metal heat treating operations in which cyanides are used in the process
F011	Spent cyanide solutions from slat bath pot cleaning from metal heat treating operations
F012	Quenching waste water treatment sludges from metal heat treating operations in which cyanides are used in the process
F019	Wastewater treatment sludges from the chemical conversion coating of aluminum
F039	Multi-source leachate
K001	Bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol
K011	Bottom stream from the wastewater stripper in the production of acrylonitrile
K013	Bottom stream from the acetonitrile column in the production of acrylonitrile
K014	Bottoms from the acetonitrile purification column in the production of acrylonitrile
K015	Still bottoms from the distillation of benzyl chloride
K016	Heavy ends or distillation residues from the production of carbon tetrachloride
K031	By-product salts generated in the production of MSMA and cacodylic acid
K035	Wastewater treatment sludges generated in the production of creosote
K044	Wastewater treatment sludges from the manufacturing and processing of explosives
K045	Spent carbon from the treatment of wastewater containing explosives K048 air flotation (DAF) float from the petroleum refining industry K049 Slop oil emulsion solids from the petroleum refining industry
K050	Heat exchanger bundle cleaning sludge from the petroleum refining industry
K051	API separator sludge from the petroleum refining industry
K052	Tank bottoms (leaded) from the petroleum refining industry
K061	Emission control dust/sludge from the primary production of steel in electric furnaces
K064	Acid plant blowdown slurry/sludge resulting from the thickening of blowdown slurry from primary copper production
K086	Solvent washes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead
K093	Distillation light ends from the production of phthalic anhydride from ortho-xylene
K094	Distillation bottoms from the production of phthalic anhydride from ortho-xylene
K098	Untreated process wastewater from the production of toxaphene
K103	Process residues from aniline extraction from the production of aniline K104 Combined wastewater streams generated from nitrobenzene/aniline production
P011	Arsenic pentoxide (t)
P012	Arsenic (III) oxide (t) Arsenic trioxide (t)
P013	Barium cyanide
P020	Dinoseb, Phenol,2,4-dinitro-6-(1-methylpropyl)-
P022	Carbon bisulfide (t)
	Carbon disulfide (t)
P028	Benzene, (chloromethyl)
	-Benzyl chloride
P029	Copper cyanides
P030	Cyanides (soluble cyanide salts), not elsewhere specified (t)

Table 14-2. RCRA and Waste Form Codes Reported by Facilities in 1989

P040	0,0-diethyl 0-pyrazinyl phosphorothioate
	Phosphorothioic acid, 0,0-diethyl 0-pyrazinyl ester
P044	Dimethoate (t)
	Phosphorodithioic acid,
	0,0-dimethyl S-[2-(methylamino)-2-oxoethyl]ester (t)
P048	2,4-dinitrophenol
	Phenol,2,4-dinitro-
P050	Endosulfan
	5-norbornene-2,3-dimethanol,
	1,4,5,6,7,7-hexachloro,cyclic sulfite
P063	Hydrocyanic acid
	Hydrogen cyanide
P064	Methyl isocyanate
	Isocyanic acid, methyl ester
P069	2-methyllactonitrile
	Propanenitrile,2-hydroxy-2-methyl-
P071	0,0-dimethyl 0-p-nitrophenyl phosphorothioate
	Methyl parathion
P074	Nickel (II) cyanide
	Nickel cyanide
P078	Nitrogen (IV) oxide
	Nitrogen dioxide
P087	Osmium tetroxide
	Osmium oxide
P089	Parathion (t)
	Phosphorothiotic acid,0,0-diethyl 0-(p-nitrophenyl) ester (t)
P098	Potassium cyanide
P104	Silver cyanide
P106	Sodium cyanide
P121	Zinc cyanide
P123	Toxaphene
	Camphene,octachloro-
U002	2-propanone (i)
	Acetone (i)
U003	Ethanenitrile (i,t)
	Acetonitrile (i,t)
U008	2-propenoic acid (i)
	Acrylic acid (i)
U009	2-propenenitrile
	Acrylonitrile
U012	Benzenamine (i,t)
	Aniline (i,t)
U019	Benzene (i,t)

Table 14-2. RCRA and Waste Form Codes Reported by Facilities in 1989

U020	Benzenesulfonyl chloride (c,r)
	Benzenesulfonic acid chloride (c,r)
U031	1-butanol (i)
	N-butyl alcohol (i)
U044	Methane, trichloro-
	Chloroform
U045	Methane,chloro-(i,t)
	Methyl chloride (i,t)
U052	Cresylic acid
	Cresols
U057	Cyclohexanone (i)
U069	Dibutyl phthalate
	1,2-benzenedicarboxylic acid, dibutyl ester
U080	Methane,dichloro-
	Methylene chloride
U092	Methanamine, N-methyl-(i)
	Dimethylamine (i)
U098	Hydrazine, 1,1-dimethyl-
	1,1-dimethylhydrazine
U105	2,4-dinotrotoluene
	Benzene, 1-methyl-2,4-dinitro-
U106	2,6-dinitrotoluene
	Benzene, 1-methyl-2,6-dinitro
U107	Di-n-octyl phthalate
	1-2-benzenedicarboxylic acid, di-n-octyl ester
U113	2-propenoic acid, ethyl ester (i)
	Ethyl acrylate (i)
U118	2-propenoic acid, 2-methyl-, ethyl ester
	Ethyl methacrylate
U122	Formaldehyde
	Methylene oxide
U125	Furfural (i)
	2-furancarboxaldehyde (i)
U134	Hydrogen fluoride (c,t)
	Hydrofluoric acid (c,t)
U135	Sulfur hydride
	Hydrogen sulfide
U139	Ferric dextran
	Iron dextran
U140	1 -propanol, 2-methyl- (i,t)
	lsobutyl alcohol (i,t)
U150	Melphalan
	Alanine, 3-[p-bis(2-chloroethyl)amino] phenyl-,L-

Table 14-2. RCRA and Waste Form Codes Reported by Facilities in 1989

U151	Mercury
U154	Methanol (i)
	Methyl alcohol (i)
U159	Methyl ethyl ketone (i,t)
	2-butanone (i,t)
U161	4-methyl-2-pentanone (i)
	Methyl isobutyl ketone (i)
U162	2-propenoic acid,2-methyl-,methyl ester (i,t)
	Methyl methacrylate (i,t)
U188	Phenol
	Benzene, hydroxy-
U190	Phthalic anhydride
	1,2-benzenedicarboxylic acid anhydride
U205	Selenium disulfide (r,t)
	Sulfur selenide (r,t)
U210	Tetrachloroethylene
	Ethene, 1,1,2,2-tetrachloro
U213	Tetrahydrofuran (i)
	Furan, tetrahydro- (i)
U220	Toluene
	Benzene, methyl-
U226	1,1,1-trichloroethane
	Methylchloroform
U228	Trichloroethylene
	Trichloroethene
U239	Xylene (i)
	Benzene, dimethyl- (i,t)
	WASTE FORM CODES
B001	Lab packs of old chemicals only
B101	Aqueous waste with low solvent
B102	Aqueous waste with low other toxic organics
B103	Spent acid with metals
B104	Spent acid without metals
B105	Acidic aqueous waste
B106	Caustic solution with metals but no cyanides
B107	Caustic solution with metals and cyanides
B108	Caustic solution with cyanides but no metals
B109	Spent caustic
B110	Caustic aqueous waste
B111	Aqueous waste with reactive sulfides
B112	Aqueous waste with other reactives (e.g., explosives)
B113	Other aqueous waste with high dissolved solids
B114	Other aqueous waste with low dissolved solids
B115	Scrubber water

Table 14-2. RCRA and Waste Form Codes Reported by Facilities in 1989

B116	Leachate
B117	Waste liquid mercury
B119	Other inorganic liquids
B201	Concentrated solvent-water solution
B202	Halogenated (e.g., chlorinated) solvent
B203	Nonhalogenated solvent
B204	Halogenated/Nonhalogenated solvent mixture
B205	Oil-water emulsion or mixture
B206	Waste oil
B207	Concentrated aqueous solution of other organics
B208	Concentrated phenolics
B209	Organic paint, ink, lacquer, or varnish
B210	Adhesive or epoxies
B211	Paint thinner or petroleum distillates
B219	Other organic liquids
B305	“Dry" lime or metal hydroxide solids chemically "fixed"
B306	"Dry" lime or metal hydroxide solids not "fixed"
B307	Metal scale, filings, or scrap
B308	Empty or crushed metal drums or containers
B309	Batteries or Battery parts, casings, cores
B310	Spent solid filters or adsorbents
B312	Metal-cyanides salts/chemicals
B313	Reactive cyanides salts/chemicals
B315	Other reactive salts/chemicals
B316	Other metal salts/chemicals
B319	Other waste inorganic solids
B501	Lime sludge without metals
B502	Lime sludge with metals/metal hydroxide sludge
B504	Other wastewater treatment sludge
B505	Untreated plating sludge without cyanides
B506	Untreated plating sludge with cyanides
B507	Other sludges with cyanides
B508	Sludge with reactive sulfides
B510	Degreasing sludge with metal scale or filings
B511	Air pollution control device sludge (e.g., fly ash, wet scrubber sludge)
B513	Sediment or lagoon dragout contaminated with inorganics only
B515	Asbestos slurry or sludge
B519	Other inorganic sludges
B601	Still bottoms of halogenated (e.g., chlorinated) solvents or other organic liquids
B603	Oily sludge
B604	Organic paint or ink sludge
B605	Reactive or polymerized organics
B607	Biological treatment sludge
B608	Sewage or other untreated biological sludge
B609	Other organic sludges

Wastes Classified in the Metals Subcategory - Questionnaire Responses 14.5.1

The wastes that EPA classified in the metals subcategory include the following:

- All wastes reported in Section G, Metals Recovery, of the 308 Questionnaire; and
- All wastes with Waste Form Codes and RCRA codes meeting the criteria specified in Table 14-3

Table 14-3. Waste Form Codes in the Metals Subcategory

All Inorganic Liquids	Waste Form Codes B101-B119	Exceptions:* Waste Form Codes B116, and B101, B102, B119 when combined with RCRA Codes: F001-F005 and other organic F, K, P, and U Codes
All Inorganic Solids	Waste Form Codes B301-B319	Exceptions:* Waste Form Code B301 when combined with RCRA Codes: F001-F005 and other organic F, K, P, and U Codes
All Inorganic Sludges	Waste Form Codes B501-B519	Exceptions:* Waste Form Code B512 when combined with RCRA Codes: F001-F005 and other organic F, K, P, and U Codes

* These exceptions were classified as belonging in the organics subcategory

Wastes Classified in The Oils Subcategory - Questionnaire Responses 14.5.2

The wastes EPA classified in the oils subcategory include the following:

- All wastes reported in Section E, Waste Oil Recovery, of the 308 Questionnaire;
- All wastes reported in Section H, Fuel Blending Operations, of the 308 Questionnaire that generate a wastewater as a result of the fuel blending operations; and
- All wastes with Waste Form Codes and RCRA codes meeting the criteria in Table 14-4.

Table 14-4. Waste Form Codes in the Oils Subcategory

Organic Liquids	Waste Form Codes B205, B206	Exceptions: None
Organic Sludge	Waste Form Code B603	Exceptions: None

Wastes Classified in the Organics Subcategory - Questionnaire Responses 14.5.3

The wastes EPA classified in the organics subcategory include the following:

- All wastes with Waste Form Codes and RCRA codes meeting the criteria specified in Table 14-5

Table 14-5. Waste Form Codes in the Organics Subcategory

Organic Liquids	Waste Form Codes B201-B204, B207-B219	Exceptions: None
Organic Solids	Waste Form Codes B401-B409	Exceptions: None
Organic Sludges	Waste Form Codes B601, B602, B604-B609	Exceptions: None
Inorganic Liquids	Waste Form Codes B101, B102, B116, B119	when combined with RCRA Codes: F001-F005 and other organic F, K, P, and U Codes
Inorganic Solids	Waste Form Code B301	when combined with RCRA Codes: F001-F005 and other organic F, K, P, and U Codes
Inorganic Sludges	Waste Form Code B512	when combined with RCRA Codes: F001-F005 and other organic F, K, P, and U Codes

For wastes that can not be easily classified into a subcategory such as lab-packs, the subcategory determination was based on other information provided such as RCRA codes and descriptive comments. Therefore, some judgement was required in assigning some waste receipts to a subcategory.

ESTABLISHING LIMITATIONS AND STANDARDS FOR FACILITY DISCHARGES 14.6

In establishing limitations and standards for CWT facilities, it is important for the permit writer or pretreatment authority to ensure that the CWT facility has an optimal waste management program. First, the control authority should verify that the CWT facility is identifying and segragating waste streams to the extent possible since segregation of similar waste streams is the first step in obtaining optimal mass removals of pollutants from industrial wastes. Next, the control authority should verify that the CWT facility is employing treatment technologies designed and operated to optimally treat all off-site waste receipts. For example, biological treatment is inefficient for treating concentrated metals waste streams like those found in the metals subcategory or wastestreams with oil and grease compositions and concentrations like those found in the oils subcategory. In fact, concentrated metals streams and high levels of oil and grease compromise the ability of biological treatment systems to function. Likewise, emulsion breaking/gravity separation, and/or dissolved air flotation is typically insufficient for treating concentrated metals wastewaters or wastewaters containing organic pollutants which solubilize readily in water. Finally, chemical precipitation is insufficient for treating organic wastes and waste streams with high oil and grease concentrations.

Once the control authority has established that the CWT facility is segregating its waste receipts and has appropriate treatment technologies for all off-site waste receipts, the permit writer or pretreatment authority can then establish limitations or standards which ensure that the CWT facility is operating its treatment technologies optimally. Available guidance in calculating NPDES categorical limitations for direct discharge facilities can be found in the U.S. EPA NPDES Permit Writers' Manual (December 1996, EPA-833-B-96-003). Sources of information used for calculating Federal pretreatment standards for indirect discharge facilities include 40 CFR Part 403.6, the Guidance Manual for the Use of Production-Based Pretreatment Standards and the Combined Waste Stream Formula (September 1985), and EPA's Industrial User Permitting Guidance Manual (September 1989). However, as illustrated in the next section, for the CWT point source category, only 40 CFR Part 403.6 and EPA's Industrial User Permitting Guidance Manual should be used as a source of information for calculating Federal CWT pretreatment standards for indirect dischargers.

Existing Guidance for Multiple Subcategory Facilities 14.6.1

Direct Discharge Guidance 14.6.1.1

For instances where a direct discharge facility's operations are covered by multiple subcategories, the NPDES permit writer must apply the limits from each subcategory in deriving the technology-based effluent limits for the facility. If all wastewaters regulated by the effluent guidelines are combined prior to treatment or discharge to navigable waters, then the permit writer would simply combine the allowable pollutant loadings for each subcategory to arrive at a single, combined set of technology-based effluent limits for the facility -- the "building block" approach (pages 60 & 61, U.S. EPA NPDES Permit Writers' Manual, December 1996). In those circumstances when the limits for one subcategory regulate a different set of pollutants than the limits applicable to another subcategory, the permit writer must ensure proper application of the guidelines. If one subcategory wastestream that does not limit a particular pollutant is combined with another wastestream that limits the pollutant, then the permit writer must ensure that the non-regulated pollutant stream does not dilute the regulated pollutant stream to the point where the pollutant is not analytically detectable. If this circumstance occurs, then the permit writer is authorized to establish internal monitoring points, as allowed under 40 CFR § 122.45(h).

The methodology for developing "building block" daily maximum limits for selected pollutants for a hypothetical CWT facility is illustrated in Example 14-1.

Example 14-1

Facility A accepts wastes in all three CWT subcategories with separate subcategory treatment systems and a combined end-of-pipe outfall. This facility treats 20,000 l/day of metal-bearing wastes, 10,000 l/day of oily wastes, and 45,000, l/day of organic wastes.

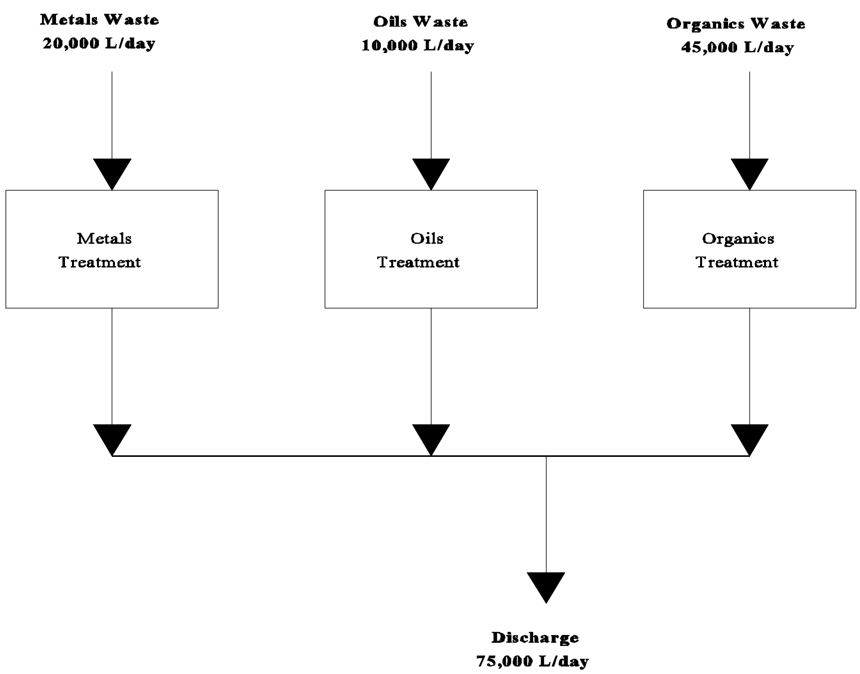

Figure 14-2. Facility Accepting Waste in All Three Subcategories With Treatment in Each.

For this example, EPA has proposed chromium and lead BAT limits for the metals and oils subcategories; fluoranthene limits for only the oils subcategory; and 2,4,6-trichlorophenol limits for only the organics subcategory. Table 14-6 shows the proposed daily maximum limits for these pollutants.

Table 14-6. Proposed BAT Daily Maximum Limits for Selected Parameters

Pollutant	Subcategory		
	Metals Daily Maximum Limit, mg/l	Oils Daily Maximum Limit, mg/l	Organics Daily Maximum Limit, mg/l
Chromium	2.9	0.65	none
Lead	0.29	0.35	none
Flouranthene	none	.045	none
2,4,6-trichlorophenol	none	none	0.16

The flow-weighted building block daily maximum limits for the combined outfall for chromium are calculated using equation 14-1:

$$Cr\ Limit = \sum_{L=A}^{C} \frac{Flow\ of\ subcategory\ L}{Total\ flow} \times Cr\ limit\ of\ subcategory\ L \qquad (14\text{-}1)$$

$$Cr\ limit = \frac{20{,}000\ \frac{L}{day}}{20{,}000\ \frac{L}{day} + 10{,}000\ \frac{L}{day} + 45{,}000\ \frac{L}{day}} \times 2.9\ \frac{mg}{L}$$

$$+ \frac{10{,}000\ \frac{L}{day}}{20{,}000\ \frac{L}{day} + 10{,}000\ \frac{L}{day} + 45{,}000\ \frac{L}{day}} \times 0.65\ \frac{mg}{L}$$

$$+ \frac{45{,}000\ \frac{L}{day}}{20{,}000\ \frac{L}{day} + 10{,}000\ \frac{L}{day} + 45{,}000\ \frac{L}{day}} \times 0.0\ \frac{mg}{L}$$

$$Cr\ limit = 0.77\ \frac{mg}{L} + 0.09\ \frac{mg}{L} + 0\ \frac{mg}{L} = 0.86\ \frac{mg}{L}$$

Table 14-7 additionally shows the calculations and calculated limits for lead, fluoranthene, and 2,4,6-trichlorophenol.

Table 14-7. "Building Block Approach" Calculations for Selected Parameters for Example 14-1

Pollutant	Equation	Combined Daily Maximum Limit
Lead	[(20,000 L/day)/(75,000 L/day) x 0.29 mg/L] + [(10,000 L/day)/(75,000 L/day) x 0.35 mg/L] + [(45,000 L/day)/(75,000 L/day) x 0 mg/L] =	0.12 mg/L
Fluoranthene	[(20,000L/day)/(75,000 L/day) x 0mg/L] + [(10,000 L/day)/(75,000 L/day) x 0.045 mg/L] + [(45,000 L/day)/(75,000 L/day) x 0] =	0.006 mg/L
2,4,6-trichlorophenol	[(20,000L/day)/(75,000 L/day) x 0 mg/L] + [(10,000 L/day)/(75,000 L/day) x 0 mg/L] + [(45,000 L/day)/(75,000 L/day) x 0.16 mg/L] =	0.096 mg/L

EPA notes that in this example, the calculated daily maximum limit for fluoranthene for the combined outfall, 0.006 mg/L, is below the minimum analytical detection level (0.01mg/L). Therefore, this facility would be required to demonstrate compliance with the fluoranthene limit for the oils subcategory prior to commingling at the outfall.

Indirect Discharge Guidance *14.6.1.2*

If Facility A in Example 14-1 discharged to a POTW, the control authority would apply the combined wastestream formula (40 CFR § 403.6(e)). The combined wastestream formula (CWF) is based on three types of wastestreams that can exist at an industrial facility: regulated, unregulated, and dilute. As defined (40 CFR 403), a regulated wastestream is a wastestream from an industrial process that is regulated by a categorical standard for pollutant x. An unregulated wastestream is a wastestream that is not covered by categorical pretreatment standards and not classified as dilute, or one that is not regulated for the pollutant in question although it is regulated for others. A dilute wastestream is defined to include sanitary wastewater, noncontact cooling water and boiler blowdown, and wastestreams listed in Appendix D to 40 CFR 403. Since the CWT industry accepts a wide variety of wastestreams, for this point source category, Appendix D does not apply and the only dilute wastestreams are those specifically defined in 40 CFR 403.

Therefore, as described in 40 CFR 403, the combined waste stream formula is

$$C_T = \frac{\sum_{i=1}^{N} C_i \, F_i}{\sum_{i=1}^{N} F_i} \times \frac{F_T - F_D}{F_T} \quad , \qquad (14\text{-}2)$$

where C_T = the alternate concentration limit for the combined wastestream;

C_i = the categorical pretreatment standard concentration limit for a pollutant in the regulated stream i;

F_i = the average daily flow of stream i;

F_d = the average daily flow from dilute wastestreams as defined in 40 CFR 403; and

F_T = the total daily average flow.

For the example 14-1 facility, there are no dilution flows. Therefore, the CWF equation reduces in the following manner:

$$C_T = \frac{\sum_{i=1}^{N} C_i \, F_i}{\sum_{i=1}^{N} F_i} \times \frac{F_T - 0}{F_T} \quad , \qquad (14\text{-}3)$$

$$C_T = \frac{\sum_{i=1}^{N} C_i \, F_i}{\sum_{i=1}^{N} F_i} \quad ,$$

$$\sum_{i=1}^{N} F_i = F_T \quad ,$$

$$C_T = \sum_{i=a}^{C} \frac{F_i}{F_T} \times C_i \quad ,$$

which is equivalent to the "building block" equation (equation 14-1).

Therefore, as described in 40 CFR Part 403 and in <u>EPA's Industrial User Permitting Guidance Manual</u>, the methodology for developing combined wastestream formula daily maximum limits would be essentially the same as the methodology for the "building block" approach used for direct dischargers. For instances where an indirect discharge facility's operations are covered by multiple subcategories, the control authority must apply the pretreatment standards from each subcategory in deriving the technology-based pretreatment standards for the facility. If all wastewaters regulated by the pretreatment standards are combined prior to treatment or discharge to the POTW, then the control authority would simply combine the allowable pollutant loadings for each subcategory to arrive at a single, combined set of technology-based pretreatment standards for the facility. In those circumstances when the standards for one subcategory regulate a different set of pollutants than the standards applicable to another subcategory, the control authority must ensure proper application of the pretreatment standards. If one subcategory wastestream that does not limit a particular pollutant is combined with another wastestream that limits the pollutant, then the control athority must ensure that the non-regulated pollutant stream does not dilute the regulated pollutant stream to the point where the pollutant is not analytically detectable. If this occurs, then the control authority will most likely need to establish internal monitoring points, as allowed under 40 CFR § 403.6(e)(2) and (4).

However, as detailed in the Guidance Manual for the Use of Production-Based Pretreatment Standards and the Combined Waste Stream Formula, the CWF approach is applied differently. Unregulated wastestreams are presumed, for purposes of using the CWF, to contain pollutants of concern at a significant level. In effect, the CWF "gives credit" for pollutants which might be present in the unregulated wastestream. Rather than treating the unregulated flow as dilution, which would result in lowering the allowable concentration of a pollutant, the guidance allows the pollutant to be discharged in the unregulated wastestream at the same concentration as the standard for the regulated wastestream that is being discharged. This is based on the assumption that if pollutants are present in the unregulated wastestream, they will be treated to the same level as in the regulated wastestream. In many cases, however, unregulated wastestreams may not actually contain pollutants of concern at a significant level. Regardless of whether the pollutants are present in significant levels or not, they are still considered unregulated when applying the formula (Pages 3-3 to 3-7, Guidance Manual for the Use of Production-Based Pretreatment Standards and the Combined Waste Stream Formula (September 1985)).

Table 14-8 shows the proposed daily maximum pretreatment standards for Facility A in Example 14-1 for chromium, lead, fluoranthene, and 2,4,6-trichlorophenol. Table 14-9 shows the combined outflow calculations using the CWF as described in EPA's Industrial User Permitting Guidance Manual (and in 40 CFR 403) and Table 14-10 shows the calculations using the CWF as described in Guidance Manual for the Use of Production-Based Pretreatment Standards and the Combined Waste Stream Formula. Note that, in this example, since there are no proposed daily maximum pretreatment standards for 2,4,6-trichlorophenol in any subcategory, there are no pretreatment standards for this pollutant for the combined outfall.

Table 14-8. Proposed Daily Maximum Pretreatment Standards for Selected Parameters

Pollutant	Subcategory		
	Metals Daily Maximum Pretreatment Standard, mg/l	Oils Daily Maximum Pretreatment Standard, mg/l	Organics Daily Maximum Pretreatment Standard, mg/l
Chromium	2.9	none	none
Lead	0.29	none	none
Flouranthene	none	0.611	none
2,4,6-trichlorophenol	none	none	none

Using the first CWF approach (Table 14-9), EPA is proposing standards for chromium and lead in the metals subcategory, standards for fluoranthene in the oils subcategory, and no standards in any subcategory for 2,4,6-trichlorophenol. After applying equation 14-3, the CWF daily maximum standards for the combined outfall are shown to be 0.77, 0.08, and 0.08, for chromium, lead, and fluoranthene, respectively.

Table 14-9. CWF Calculations for Selected Parameters for Example 14-1 Using 40 CFR 403 and Guidance in EPA's Industrial User Permitting Guidance Manual

Pollutant	Equation	Combined Daily Maximum Limit, mg/l
Chromium	[(20,000l/day)/(75,000 l/day) x 2.9 mg/l] + [(10,000 l/day)/(75,000 l/day) x 0 mg/l] + [(45,000 l/day)/(75,000 l/day) x 0 mg/l] =	0.77
Lead	[(20,000l/day)/(75,000 l/day) x 0.29 mg/l] + [(10,000 l/day)/(75,000 l/day) x 0 mg/l] + [(45,000 l/day)/(75,000 l/day) x 0 mg/l] =	0.08
Fluoranthene	[(20,000l/day)/(75,000 l/day) x 0mg/l] + [(10,000 l/day)/(75,000 l/day) x 0.611mg/l] + [(45,000 l/day)/(75,000 l/day) x 0 mg/l] =	0.08

However, under the second CWF approach (Table 14-10), the metals subcategory chromium and lead standards extend to the oils and organics subcategories, the anthracene standard for the oils subcategory extend to the metals and organics subcategories, and 2,4,6-trichlorophenol is not limited for any subcategory. The CWF daily maximum standards for the combined outfall are 2.9, 0.290, and 0.611 mg/l for chromium, lead, and anthracene, respectively.

Table 14-10. CWF Calculations for Selected Parameters in Example 14-1 Using the Guidance Manual for Use of Production-Based Pretreatment Standards and Combined Waste Stream Formula

Pollutant	Equation	Combined Daily Maximum Limit, mg/l
Chromium	[(20,000l/day)/(75,000 l/day) x 2.9 mg/l] + [(10,000 l/day)/(75,000 l/day) x 2.9 mg/l] + [(45,000 l/day)/(75,000 l/day) x 2.9 mg/l] =	2.9
Lead	[(20,000l/day)/(75,000 l/day) x 0.29 mg/l] + [(10,000 l/day)/(75,000 l/day) x 0.29 mg/l] + [(45,000 l/day)/(75,000 l/day) x 0.29 mg/l] =	0.29
Fluoranthene	[(20,000l/day)/(75,000 l/day) x 0.611mg/l] + [(10,000 l/day)/(75,000 l/day) x 0.611mg/l] + [(45,000 l/day)/(75,000 l/day) x 0.611 mg/l] =	0.611

Table 14-11 lists the daily maximum pretreatment standards for the selected parameters calculated using the two different approaches. For comparison purposes, the table also lists the "building block approach" BAT daily maximum limitations.

Table 14-11: Daily Maximum Limits and Standards for Example 14-1

Pollutant	Direct Dischargers "Building Block"	Indirect Dischargers CWF - 1[1]	Indirect Dischargerst CWF - 2[2]
Chromium	0.86 mg/l	0.77 mg/l	2.9 mg/l
Lead	0.12 mg/l	0.08 mg/l	0.29 mg/l
Fluoranthene	0.006 mg/l	0.08 mg/l	0.611 mg/l
2,4,6-trichlorphenol	0.096 mg/l	no standard	no standard

[1] Using 40 CFR Part 403 and EPA's Industrial User Permitting Guidance Manual
[2] Using the Guidance Manual for the Use of Production-Based Pretreatment Standards and the Combined Waste Stream Formula

The table shows that if the example facility were to discharge indirectly using the CWF approach detailed in the Guidance Manual for the Use of Production-Based Pretreatment Standards and the Combined Waste Stream Formula (CWF-2), its pretreatment standards would be 337, 242, and over 10,000 percent higher than its direct discharge BAT limitations, for chromium, lead, and fluoranthene, respectively. As such, for the CWT Point Source Category, control authorities should not apply the CWF as described in the in Guidance Manual for the Use of Production-Based Pretreatment Standards and the Combined Waste Stream Formula.

The example 14-1 calculation using the CWF as described in EPA's Industrial User Permitting Guidance Manual (CWF-1) also illustrates a problem with this approach. Since there are no proposed pretreatment standards for chromium and lead, the daily maximum standards under this CWF approach for chromium and lead would be lower than the direct discharge BAT limitations. In order to alleviate this problem, for the CWT point source category, EPA would define an individual parameter as having a "regulated flow" if the pollutant is limited through BAT. Therefore, the flow for a pollutant with no established BAT limit would be included as a dilution flow and the flow for a pollutant with an established BAT limit would be included as an allowance.

For the metals and organics subcategories, since the proposed limits and standards are based on identical technologies, the CWF allowance would be determined based on the BAT limit. For the oils subcategory, however, since the proposed limitations and standards are based on different technologies, the CWF allowance would be determined based on the PSES limit if one had been proposed. For the metals subcategory, all proposed BAT pollutants pass through and were, therefore, proposed for PSES. Tables 14-12 and 14-13 list the CWF allowances for the oils and organics subcategories, respectively.

Table 14-12. Allowances for Use in Applying the Combined Waste Stream Formula for CWT Oils Subcategory Flows (PSES or PSNS)

Pollutant	Daily Maximum Allowance, mg/l	Monthly Average Allowances, mg/l
Arsenic	1.81	1.08
Cadmium	0.024	0.012
Chromium	0.584	0.283
Lead	0.314	0.152
Mercury	0.010	0.005
butyl benzyl phthalate	0.127	0.075

Table 14-13. Allowances for Use in Applying the Combined Waste Stream Formula for CWT Organics Subcategory Flows

Pollutant	Daily Maximum Allowance, mg/l	Monthly Average Allowances, mg/l
Antimony	0.97	0.691
Copper	0.85	0.752
Zinc	0.46	0.408
2-butanone	8.83	2.62
2-propanone	20.7	6.15
2,4,6-trichlorphenol	0.155	0.106
acetophenone	0.155	0.072
phenol	3.70	1.09
pyridine	0.370	0.182

For example 14-1, using the proposed CWF approach with allowances, the combined end-of-pipe standards for chromium, lead, and fluoranthene would be 0.85 mg/l, 0.12 mg/l, and 0.08 mg/l, respectively. Table 14-14 shows the calculations.

Table 14-14 CWF Calculations for Example 14-1 Including Allowances

Pollutant	Equation	Combined Daily Maximum Limit, mg/l
Chromium	[(20,000l/day)/(75,000 l/day) x 2.9 mg/l] + [(10,000 l/day)/(75,000 l/day) x 0.58 mg/l] + [(45,000 l/day)/(75,000 l/day) x 0 mg/l] =	0.85
Lead	[(20,000l/day)/(75,000 l/day) x 0.29 mg/l] + [(10,000 l/day)/(75,000 l/day) x 0.31 mg/l] + [(45,000 l/day)/(75,000 l/day) x 0 mg/l] =	0.12
Fluoranthene	[(20,000l/day)/(75,000 l/day) x 0mg/l] + [(10,000 l/day)/(75,000 l/day) x 0.611mg/l] + [(45,000 l/day)/(75,000 l/day) x 0 mg/l] =	0.08

EPA has taken this approach, even for indirect dischargers, since a pollutant may pass the pass-through test and not be regulated at PSES, but still provide a significant contribution of that pollutant in the combined wastestream as in the case of chromium and lead in the example. By adopting this approach for the CWT point source category, EPA can ensure that standards for indirect dischargers are equivalent to limitations for direct dischargers, but still allow for any contribution by these pollutants to the combined wastestream.

Example 14-2 further illustrates the use of the CWF, as proposed, for the CWT point source category.

Example 14-2: Facility Which Accepts Wastes in Multiple Subcategories and Treats the Wastewater Sequentially

Facility B accepts waste in the oils and metals subcategory. The total volume of wastewater discharged to the local POTW is 100,000 liters per day and the relative percentagse of oils and metal subcategory flows are 30% and 70% respectively. The facility segregates oils and metals waste receipts and first treats the oils waste receipts using emulsion breaking/gravity separation and dissolved air flotation. (See Figure 14-3) The facility then commingles this wastewater with metal subcategory waste receipts and treats the combined wastestreams using primary and secondary chemical precipitation and solid/liquid separation followed by mutlimedia filtration.

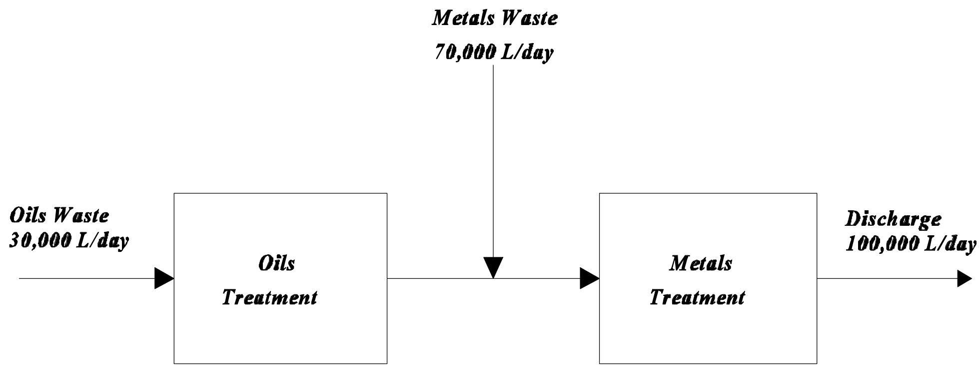

Figure 14-3. Facility Which Accepts Wastes in Multiple Subcatgories and Treats Separately

For this example, both the oils and metals subcategory wastewaters are regulated process flows. Looking only at chromium, lead, fluoranthene, and 2,4,6-trichlorophenol again, EPA has proposed chromium (2.9 mg/l) and lead (0.29 mg/l) PSES daily maximum standards for the metals subcategory only; and fluoranthene (0.611 mg/l) daily maximum standards for only the oils subcategory. EPA has also provided an allowance for chromium (0.58 mg/l) and lead (0.31 mg/l) in the oils subcategory. EPA has not proposed daily maximum standards or daily maximum BAT limits for 2,4,6-trichlorophenol in either subcategory.

Even though EPA has not proposed daily maximum standards for chromium and lead in the oils subcategory, their contribution would not be set to zero. In applying the CWF, the control authority would determine the contribution for chromium and lead in the oils subcategory based on Table 14-2. Therefore, the chromium daily maximum standard would be (0.7 x 2.9) + (0.3 x 0.58) = 2.2 mg/l; and the lead daily maximum standard would be (0.7 x 0.29) + (0.3 x 0.31) = 0.29 mg/l. The fluoranthene calculation, however, illustrates the case where a pollutant's contribution in a regulated wastestream would be zero. Since EPA has not proposed BAT daily maximum limits for fluoranthene in the metals subcategory, the contribution for flouranthene in the metals subcategory would be considered a dilution flow and set to zero. Therefore, the fluoranthene daily maximum standard would be (0.7 x 0) + (0.3 x 0.611) = 0.18 mg/l. The control authority would not establish a daily maximum limitation for 2,4,6-trichlorophenol since EPA has not proposed regulating it for either subcategory.

CWT Facilities Also Covered By Another Point Source Category 14.6.2

As detailed in Chapter 3, some manufacturing facilities, which are subject to existing effluent guidelines and standards, may also be subject to provisions of this rule. In all cases, these manufacturing facilities accept waste from off-site for treatment and/or recovery which are generated from a different categorical process as the on-site generated wastes. EPA is particularly concerned that these facilities demonstrate compliance with all applicable effluent guidelines and pretreatment standards -- including this rule. Example 14-3 illustrates the daily maximum limitations calculations for a CWT facility which is also subject to another effluent guideline.

Example 14-3 Categorical Manufacturing Facility Which Also Operates as a CWT Facility

Facility C is a manufacturing facility currently discharging wastewater to the local river under the OCPSF point source category. Facility C also performs CWT operations and accepts off-site metal-bearing wastes for treatment. Facility C commingles the on-site wastewater and the off-site wastewater together for treatment in an activated sludge system. The total volume of wastewater discharged at Facility C is 100,000 liters per day. The total volume of wastewater contributed by the off-site wastewater is 10,000 liters per day.

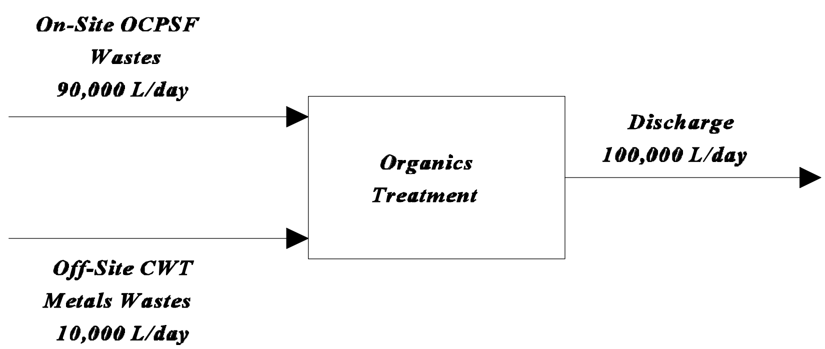

Figure 14-4. Categorical Manufacturing Facility Which Also Operates as a CWT

Facility C would be required to monitor and demonstrate that it has complied with the CWT metals BAT limitations. Since Facility C commingles the wastestreams and has no treatment in place for the metals wastestreams, Facility C would be unable to demonstrate compliance with the BAT limits through treatment rather than dilution. Therefore, Facility C would not be able to commingle the CWT metals wastestreams and on-site OCPSF wastestreams for treatment.

If Facility C chose to install metals treatment for the off-site wastewater and wanted to commingle the effluent from the metals treatment and the biological treatment at a single discharge point (See Figure 14-5), the permit writer would use the building block approach to determine the limitations. Using lead and chromium, for the metals subcategory, EPA has proposed BAT limits of 2.9 mg/L for chromium and 0.29 mg/L for lead. Since the OCPSF facility has no limits for chromium and lead, the contribution for the OCPSF wastewaters would be zero. Therefore, the chromium daily maximum limit would be (0.1 x 2.9) + (0.9 x 0) = 0.29 mg/l and the lead daily maximum limit would be (0.1 x 0.29) x (0.9 x 0) = 0.029 mg/l. Since the daily maximum limit for lead is below the minimum analytical detection level (.050 mg/l), the facility would be required to demonstrate compliance with the lead limit for the CWT metals subcategory prior to commingling at the outfall. The daily maximum limitations for other pollutants would be calculated in a similar manner. Since EPA has not proposed any BAT limits for organic pollutants under the metals subcategory of the CWT point source category, the contribution for these pollutants would be zero.

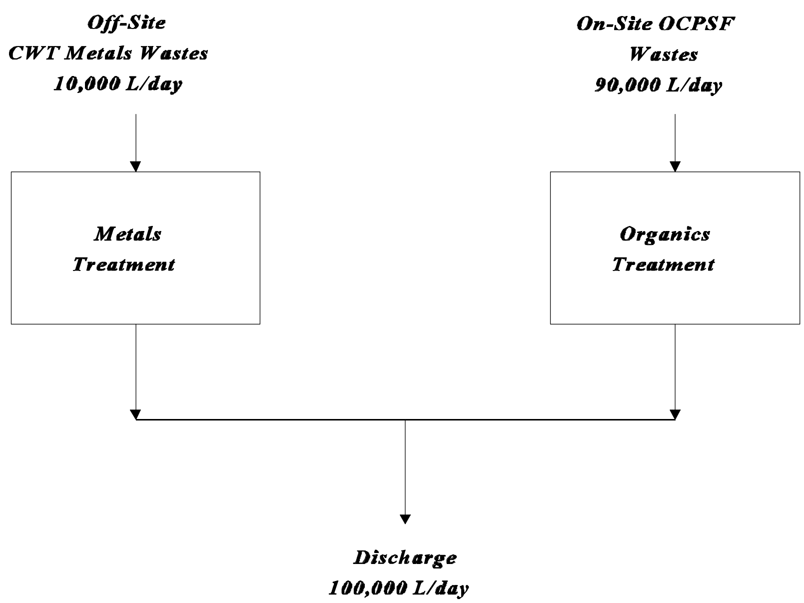

Figure 14-5. Facility that Commingles Wastestreams after Treatment.